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IN THE CLAIMS

1. (currently amended) In a computer system, an improved multi-client to multi-server software system comprising:
at least one server process ~~software application~~ capable of sending and receiving messages;,
at least one client process ~~software application to said server process software application~~ capable of sending and receiving messages; and
~~a no more than one control process software module for passing said the messages to and from said the server process and the client process, where the server process, the client process, and the control process are all separate and distinct processes, and all messages between the server process and the client process are controlled by and relayed through the control process.~~
2. (currently amended) The invention computer system of claim 1, wherein: ~~said the~~ server process and ~~said the~~ client process send and receive messages only to and from ~~said the~~ control process ~~software module~~, and communication between ~~said the~~ server process and ~~said the~~ client process occurs under direction of ~~said the~~ control process, ~~said the~~ control process acts acting as a message broker between ~~said the~~ server process and ~~said the~~ client process.
3. (currently amended) The computer system invention of claim 2, wherein:
~~said the~~ control process controls the running of ~~said the~~ server process and ~~said the~~ client process; and
~~said the~~ control process sets synchronization points, ~~said the~~ synchronization points comprising being points in time where ~~said the~~ control process pauses the running of ~~said~~ server process.
4. (currently amended) The computer system invention of claim 3, further comprising:
a plurality of server processes, and
a plurality of client processes, and

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each of said the plurality of server processes communicating via said the control process with a predetermined number of said the plurality of client processes associated with each of said the server processes, with said the control process controlling said the plurality of server processes and client processes,

wherein said the control process stops each of the running of said server processes when each of said the server processes reaches a synchronization point, said the synchronization points in time being measured as elapsed time from the start of simulation by said the control process.

5. (currently amended) The computer system invention of claim 2, further comprising: a plurality of client processes associated with said the server process, each of said the plurality of client processes communicating via said the control process with said the server process, with said the control process controlling said the server process and said the client processes.
6. (currently amended) The computer system invention of claim 2, further comprising: a plurality of server processes; and a plurality of client processes, and each of said the plurality of server processes communicating via said the control process with a predetermined number of said the plurality of client processes associated with each of said the server processes, with said the control process controlling said the plurality of server processes and the client processes.
7. (currently amended) The computer system invention of claim 6, wherein: said the control process sets up a predetermined ordered queue of said the server processes and a predetermined ordered queue of said the client processes, and said the messages are sent to and from the client processes and the server processes according to said the predetermined ordered queues of server processes and client processes.
8. (currently amended) The computer system invention of claim 3, wherein: said the server process evaluates an predetermined event expression to determine the occurrence of an event in said the server process, and;

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at least one said the server process sends an event expression message to said the control process upon the occurrence of said the predetermined event expression in said the server process, said the event expression message containing a time stamp, said the time stamp being an indication of the a time at which said the event occurred in said the server process.

9. (currently amended) The computer system invention of claim 8, further comprising: a plurality of server processes, and a plurality of client processes, and each of said the plurality of server processes communicating via said the control process with a predetermined number of said the plurality of client processes associated with each of said the server processes, with said the control process controlling said the plurality of server processes and the client processes.
10. (currently amended) The computer system invention of claim 9, wherein said the control process maintains said the time stamp for each server process, said the time stamp being an indication of the an elapsed time elapsed from the a start of the control process, and where said the elapsed time elapsed is proportional to the a time elapsed in said the control process between said the synchronization points.
11. (currently amended) The computer system invention of claim 9, wherein said the control process sets up a server order queue comprising a predetermined ordered queue of said the server processes and a client order queue comprising a predetermined ordered queue of said the client processes, and said the messages are sent to and from the client processes and the server processes according to a predetermined ordered queue comprising said the server order queue and said the client order queue.
12. (currently amended) The computer system invention of claim 11, wherein: said the control process receives a plurality of said the event expression messages from said the server processes, and said the control process sorts said the event expression messages received from said the server processes according to the server order queue, and

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 said the control process ordering each of said the event expression messages within said the server order queue according to the an earliest time of said the time stamps at which said the event occurred in said the server process.

13. (currently amended) The computer system invention of claim 124, wherein: said the control process delivers said the sorted event expression messages to said the client processes associated with said the server processes according to said the predetermined client ordered queue of client processes.
14. (currently amended) The computer system invention of claim 5, wherein:
 each of said the plurality of client processes each sends a finish message, indicating said the client process is finished running, to said the control process for communication to said the server process associated with said the client process, when each of said the client processes is finished running;
 said the control process holds each of said the finish messages from said the plurality of client processes until all of said the plurality of client processes associated with a server process are finished running; and,
 wherein said the control process sends a finish message to said the server process indicating the client processes are finished running.
15. (currently amended) The computer system invention of claim 14, wherein:
 each of said the plurality of server processes each sends a finish message, indicating said the server process is finished running, to said the control process when said the client processes associated with each of said the server processes are finished;
 said the control process holds each of said the finish messages from said the plurality of server processes until all of said the plurality of server processes have sent said the finish messages to said the control process; and
 wherein said the server processes, client processes, and control process finish operations and exit.

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16. (currently amended) The computer system invention of claim 2, further comprising:
 - a plurality of client processes, said each of the plurality of client processes associated with a predetermined server process, and communicating with said the predetermined server process under the direction of said the control process; and
 - a plurality of server processes, each of said the server processes evaluating an event expression to determine the occurrence of an event in said the server process, and each of said the server processes sending an event expression message to said the control process upon the occurrence of said the event in said the server process, said the event expression message containing a time stamp indicating the a time at which said the event occurred in said the server process.
17. (currently amended) The computer system invention of claim 16, further comprising: said the control process software module sets up a plurality of predetermined ordered queues comprising a client ordered queue of client applications processes in a particular order, a server ordered queue of server applications processes in a particular order, and a time ordered queue of event expression messages received from said the plurality of server applications processes, said the time ordered queue ordered according to the an earliest in time event expression message.
18. (currently amended) The computer system invention of claim 16, wherein: said the control process software module resides within said a common hardware platform with one of the server processes application, in the code comprising said server process application.
19. (currently amended) A server-client computer simulation system comprising:
 - a computer comprising including a processor, primary and secondary memory, and means for I/O;

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at least one server comprising including a processor, primary and secondary memory, means for I/O, and a server application-process residing in said the memory and operating said on the processor;

at least one client comprising including a processor, primary and secondary memory, means for I/O, and a client application-process residing in said the memory and operating said on the processor, and

a single control process software module residing in said the computer memory, said the control process software module acting as a message broker between said the server application-process and said the client application process, for passing messages between said the server application-process and said the client application process, and with communication between said the server application-process and said the client application-process controlled and directed exclusively by said the control process software module, said the server-client computer simulation system acting to simulate a device in a repeatable manner.

20. (currently amended) The server-client computer simulation system invention of claim 19, wherein said the device simulated is a device selected from the a group consisting of electrical devices, mechanical devices, electromechanical devices, computer networks, DSL modems, ASICs disk drive controllers, graphics processors, network interface adapters, and communications networks.
21. (currently amended) The server-client computer simulation system invention of claim 19, wherein said the control process software module controls said the server application-process and said the client application-process, and said the control process sets synchronization points for said the server application-process, which synchronization points are comprising points in time where said the control process software module pauses the running of said server application process.
22. (currently amended) The server-client computer simulation system invention of claim 21, wherein said the control process software module comprises includes a

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synchronization varying software module for varying the an elapsed time duration between said the synchronization points.

23. (currently amended) The server-client computer simulation system invention of claim 21, wherein said the control process stops all of said the servers process upon when said the servers process reachesing a synchronization point.
24. (currently amended) The server-client computer simulation system invention of claim 19, further comprising a plurality of client applicationsprocesses, said the plurality of client applications processes associated with said the server application process, and communicating with said the server application process under the direction of said the control process software module.
25. (currently amended) The server-client computer simulation system invention of claim 24, whereinfurther comprising a plurality of servers applications processes, said the plurality of server applications processes communicating via said the control process software module with a predetermined number of said the plurality of client processes applications associated with each of said the server applications processes.
26. (currently amended) The server-client computer simulation system invention of claim 25, wherein said the control process software module sets up a plurality of predetermined ordered queues comprising a client ordered queue of client applications processes and a server ordered queue of server applications processes.
27. (currently amended) The server-client computer simulation system invention of claim 21, wherein:
a plurality of server applications processes, a plurality of client applications processes associated with said the server applications processes, said the plurality of server applications processes communicating via said the control process software module with said predetermined number of said

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the plurality of client applications processes associated with each of said the server applications processes;

wherein, each of said the server applications processes evaluates an event expression to determine the occurrence of an event in said the server application process, and each of said the server applications processes sends an event expression message to said the control process software module upon the occurrence of said the event in said the server application process, said the event expression message containing a time stamp indicating the a time at which said the event occurred in said the server process.

28. (currently amended) The server-client computer simulation system invention of claim 27, wherein said the control process software module sets up of a plurality of predetermined ordered queues comprising a client ordered queue of client processes applications in a particular order, a server ordered queue of server processes applications in a particular order, and a time ordered queue of event expression messages received from said the plurality of server applications processes, said the time ordered queue ordered according to the an earliest in time event expression message, and said the control process software module passing messages to and from said the server processes and said the client processes applications according to at least one of said the predetermined client ordered queues and the server ordered queue.
29. (currently amended) A method of carrying out a simulation employing of multiple clients and multiple servers, the method comprising the steps of:
 - running a plurality of server processes software applications that each simulate a server application;
 - running a plurality of client processes software applications that each simulate a client application, each of said the client applications processes associated with at least one of said the server applications processes;
 - running a single control process software application that acts as a message broker between said the server processes and the client processes, all messages

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between the server processes and the client processes managed and controlled by said the control process, and said the control process controlling the operation of said the server processes; and maintaining the an elapsed time of said the simulation in-with said the control process software application.

30. (currently amended) The invention-method of claim 29, further comprising the steps of:
determining the occurrence of a predetermined events in said the server applicationsprocesses;
maintaining, in-with said the control process, a list of client applications processes, a list of and server processesapplications, and a list of messages for associated with the occurrence of said predetermined events that occur in said server applications; and
communicating the associated message said predetermined events from said server applications to said the client processesapplications upon occurrence of one of the predetermined events.
31. (currently amended) The invention-method of claim 30, further comprising the steps of:
ordering in said with the control process, said the messages of said predetermined events according to the an earliest time that such the predetermined events occurred in said the server processesapplications; and,
delivering said the messages to said the client processes applications according to said the ordering of said predetermined events.
32. (currently amended) The invention-method of claim 310, wherein the ordering, in said control process, said of the list of messages for the occurrence of said predetermined events according to is determined by at least one of:
(1) time order, the by an earliest time that such predetermined events occurred in said the server processesapplications,

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(2) server order, an ordering according to a predetermined queue-order of server processes, and;

(3) client order, an ordering according to a predetermined queue-order of clients.

33. (currently amended) The invention-method of claim 32, wherein further comprising the steps of:
sorting the list of messages of said predetermined events according to said the server order and said the time order; and
delivering, using said control process, said the messages of said predetermined events from said the control process to said the plurality of client processes applications according to said the client order and said the time order, with the earliest messages delivered first.

34. (currently amended) The invention-method of claim 29, further comprising the steps of:
setting a plurality of synchronization points comprising of elapsed time in the simulation of servers and clients; and
stopping said the server processes upon each of said the server processes reaching said the synchronization points.

35. (currently amended) The invention-method of claim 34, further comprising the steps of: varying the duration of elapsed time between said the synchronization points by way of said the control process setting the duration of time to elapse between synchronization points.

36. (currently amended) The invention-method of claim 29, further comprising the steps of:
setting a plurality of synchronization points comprising of elapsed time in the simulation of servers and clients;
determining the an occurrence of a predetermined event in said the server processes applications;
maintaining, in with said the control process, a list of client processes applications; a list of and server processes applications, and a list of the

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occurrences of said the predetermined events that occur in said server applications;

communicating said the predetermined events from said server applications to said the client processes applications;

ordering, in-with said the control process, said the predetermined events according to the an earliest time that such the predetermined events occurred in said the server processes applications; and,

delivering messages to said the client processes applications relating to said the predetermined events according to said the ordering of said the predetermined events.

37. (currently amended) The invention-method of claim 36, further comprising the steps of:

determining through said the control process whether said the client processes applications are finished with said the simulation through the an occurrence of a client process finish message indicating that said the client processes applications are finished;

determining through said the control process whether said the server processes applications are finished with said the simulation through the occurrence of a server process finish message indicating that said the server processes applications are finished;

said acknowledging with the control process acknowledging said when the client process finish messages and the server process application-finish messages have been received, and

said terminating the simulation terminating when said the client processes and the server processes applications have all finished.

38. (currently amended) The invention-method of claim 29, further comprising the steps of:

polling each of said the plurality of client processes software applications with said the control process software application in a predetermined manner;

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temporarily storing said the messages from said the client processes software applications, until such time that said the client processes software applications issue a predetermined message to simulate to said the control process; and

forwarding said the messages from said the client processes software applications to said the server processes software applications associated with said the client processes software applications upon the occurrence of said the predetermined message to simulate.

A simulator apparatus comprising:

means for sending and receiving messages in a computer system, said means for sending and receiving messages acting as a server;

means for sending and receiving messages in a computer system, said means for sending and receiving messages acting as a client;

means for sending and receiving messages server means and said client means, said means for sending and receiving messages acting as a message broker between said server means and said client means, and said means for sending and receiving messages able to stop the running of said server means and said client means at predetermined points in time comprising synchronization points; wherein,

said server means, said client means and said message broker means act as a simulator performing a repeatable simulation.

39. (new) A simulator apparatus comprising:

at least one first means for sending and receiving messages in a computer system, the first means for sending and receiving messages acting as a server process,

at least one second means for sending and receiving messages in a computer system, the second means for sending and receiving messages acting as a client process, and

a single third means for sending and receiving messages between the server process and the client process, the third means for sending and receiving messages acting as a message broker between the server process and the

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client process, and the third means for sending and receiving messages adapted to stop the server process and the client process at predetermined points in time that are designated as synchronization points, wherein the server process, the client process, and the message broker are all separate and distinct processes, and all messages between the server process and the client process are controlled by and relayed through the message broker, wherein the server process, the client process and the message broker act as a simulator performing a repeatable simulation.

40. (currently amended) The apparatus according to claim 39, wherein:
~~said the server process means~~ evaluates a predetermined event expression to determine the occurrence of an event in ~~said the server process means~~, and, ~~said the server process means~~ sends a event expression message to ~~said the~~ message broker ~~means~~ upon the occurrence of ~~said the predetermined event expression in said the server process means~~, ~~said the~~ event expression message containing a time stamp, ~~said the~~ time stamp an indication of the a time at which ~~said the~~ event occurred in ~~said the server process means~~,
~~and further including a plurality of said the server processes means and said a plurality of the client processes means~~, wherein ~~said the~~ message broker ~~means~~ delivers ~~said the~~ event expression messages between ~~said the server processes means~~ and ~~said the client processes means~~ according to a predetermined queue.

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